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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/598,457	02/08/96	CURRY	J 414.013
			EXAMINER

LM61/1202  
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MET X ART UNIT	PAPER NUMBER
2743	4
DATE MAILED: 12/02/97	

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

### OFFICE ACTION SUMMARY

- ☒ Responsive to communication(s) filed on 02/08/96
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

- ☒ Claim(s) 1-27 is/are pending in the application.
- Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-27 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948. (*Substitute PTO-948*)
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2
- ☐ Interview Summary, PTO-413
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948 *Substitute*
- ☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 24-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper et al. (US Patent 4,910,799, hereafter, Cooper'799).

Regarding claims 24-27, Cooper'799 teaches a spatial sound conference bridge which comprising at least two input port for receiving two audio signals (114, 116), a head-related transfer function (HRTF) unit (140) connected to the two input ports for imparting a HRTF at least one audio signal to produce at least one spatialized audio signal; and at least two output ports (140, 142) connected to the HRTF for transmitting the spatialized audio signal (see for example Fig. 1B of Cooper'799, other embodiments by Cooper'799 also met the claimed limitations). Audio compression and decompression units are inherently provided by Cooper'799 for audio signal processing.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-12 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno (US Patent 5,512,938) in view of Tanaka et al. (US Patent 5,598,478, hereafter, Tanaka'478).

Regarding claims 1, 5-7, 9, 12, 15 and 18, Ohno teaches a spatial sound conference system which comprising a conference station with microphone (152) connected to a communication channel for receiving audio signals. And remote station with loudspeaker (153) connected to the communication for reproducing audio signal. What's not teach in Ohno is the microphone 152 is right and left spatially disposed microphones for receiving right and left audio signals with a difference between the right and left audio signals represent a HRTF (head-related transfer function); and the loudspeaker 153 is right and left spatially disposed loudspeakers.

Conventional stereophonic sound recording and reproducing with left and right spatially disposed microphones for obtaining spatial audio signals and left and right spatially disposed loudspeakers for reproducing spatial audio signals related to HRTF with spatially disposed microphone mounting to a dummy head is old and well known in the art. Tanaka'478 clearly teaches

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conventional acoustic signal reproducing apparatus with left and right spatially disposed microphones for obtaining spatial audio signals and left and right spatially disposed loudspeakers for reproducing spatial audio signals related to HRTF with spatially disposed microphone mounting to a dummy head and a difference between the right and left audio signals represent a HRTF (see Col. 1, line 23-Col. 3, line 12 and Figs. 17 and 19 with dummy head recording). It would have been obvious to one of ordinary skill in the art to use an conventional acoustic signal reproducing apparatus taught by Tanaka'478 for the conference system taught by Ohno in order to spatial the input audio signals and create a realistic three dimensional aural impression for the conferees.

For what's called for in claims 2-4 and 16-17, see Col. 4, lines 28-35, microphone 152 and speaker 153 of Ohno.

Regarding claim 8, Tanaka'478 clearly shown in Figs. 20-21 the different positions measurement of the audio signal relating to the dummy head. It would have been obvious for one of ordinary skill in the art to used a head-tracking sensor and a position simulator for accurate HRTF measurement of the audio signal related to the dummy head.

Regarding claims 10-11, optimal positioning of the video camera and display would have been obvious to one of ordinary

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skill in the art in order to provide conferees with the best video signal caption and display.

5. Method claims 13-14 and 19-23 are rejected for the same reasoning as set forth for the rejection of various apparatus claims 1-12 and 15-18 since the apparatus claims perform the same functions as the method claims.

6. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 305-9508 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II,  
2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is (703) 308-6610.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

xm

11/21/1997

  
CURTIS KUNTZ  
SUPERVISORY PATENT EXAMINER  
GROUP 2600